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LIVESTOCK

Waste

WHY WASTE IT?

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A cow or a steer produces as much waste every day as 16 humans, a hog or sheep as much as two, seven chickens as much as one.

Add up our 12 million milk cows, 100 million other cattle, 20 million sheep, 68 million hogs, and 3½ billion broilers—and the total is a staggering 2 billion tons—4 trillion pounds—of waste a year.

Livestock and poultry produce 10 times more wastes than our human population. Complicating the massive disposal problem is the fact that as much as half these wastes are produced under concentrated conditions.

When herds and flocks were smaller and scattered over wider areas, disposing of livestock wastes was relatively easy. Farmers simply spread the wastes over cropland and did little else to help nature recycle them.

But old-fashioned methods of waste disposal don't work today for a couple of reasons:

—Economic studies indicate that the cost of handling manures makes them no longer competitive in price with chemical fertilizers.

—Many large scale, confinement-type livestock and poultry operations don't have the cropland or pasture on which to spread manure, even if the practice were economically feasible.

How, then, to dispose of livestock wastes? They can't be allowed to accumulate for they give off noxious odors, they're a breeding place for vermin, a source of unsavory dusts when dry and polluting runoff when wet.

Some new ways of coping with livestock wastes may result from the Symposium on Animal Waste Management held late in September and cosponsored by the U.S. Department of Agriculture, Environmental Protection Agency, Council of State Governments, and the National Association of State Universities and Land Grant Colleges. The symposium was attended by several hundred waste management experts and farmers and ranchers particularly concerned with the problem.

Research on animal waste management is not new—indeed it dates back to before the turn of the century in this country. But most of the early work focused on the use of manure as a fertilizer. Today scientists are looking for ways to reclaim or recycle wastes rather than just dispose of them.

Here are some of the waste management methods currently in use or under investigation:

Land disposal: When the land's available (and far enough away from nonfarm communities so no one objects) spreading manure on cropland or pasture is still an excellent way of recycling wastes.

Manure contains many essential plant nutrients—especially nitrogen, phosphorus, and potassium—as well as some trace elements not generally found in chemical fertilizers. And animal wastes, when spread over the land, help build and maintain soil fertility and tilth and cut down on erosion.

Agricultural engineers have been working on ways of improving land disposal techniques—with special emphasis on cutting labor requirements and improving stockpiling procedures.

A big step forward has been the adaptation of the liquid manure sys-

tem, popular in Europe, to U.S. farming technology. Basically this system calls for flushing the manure into collection pits or tanks and holding it until time for disposal. Then the manure-water mixture is spread on the land by a tank wagon, through a sprinkler irrigation system, or through irrigation ditches.

Lagoons: Another method of recycling livestock wastes involves lagoons—ditches where wastes are dumped to allow aerobic decomposition (breaking down manure with oxygen-using bacteria). The decomposed material can be redistributed on cropland and pastures with irrigation equipment.

The big advantage of the lagoon system is its simplicity and low cost. But there are lots of drawbacks, too.

A poorly designed lagoon can, and too often does, leak fertilizer nutrients into nearby streams, ponds, or rivers. And overloaded lagoons will produce noxious gases and vile odors as the bacteriological decomposition changes as a result of oxygen depletion.

Agricultural engineers are working on ways to improve the lagoon disposal system. One group is testing modifications of the Pasveer Oxidation Ditch. Developed in Holland to handle human wastes, the Pasveer treatment calls for mechanical stirring and aeration to supplement natural oxidation.

Another possibility: engineers are testing ways of purifying lagoon runoff while making maximum use of fertilizer nutrients.

The engineers have built a series of three basins downhill from a lagoon. The lagoon runoff flows through the basins where hydroponically grown grasses strain out the solid matter and purify the runoff. The grasses can be harvested as a forage for livestock.

Composting: This ancient disposal method is also coming in for a new look nowadays. Long popular with home gardeners, composting is catching on with farmers, too, because it's one of the more economical methods of waste disposal.

Composting reduces raw organic material to a loose, workable, odorless nutritive soil additive. It also reduces the volume of waste.

Composting of poultry wastes has come in for most of the research. The usual method is to expose the wastes in a field and periodically turn the compost heaps. But researchers have also done some composting in the poultry house itself. They've taken chicken litter and inoculated it with specially selected bacteria which promote aerobic decomposition. The process is relatively inexpensive, odorless, dustless, and fly-free.

In North Carolina, other agricultural engineers have developed a prototype machine that speeds up the composting of two agricultural wastes—chicken litter and sawdust—and yields a soil additive that can be used on lawns, greenhouse crops, and even high-income field crops.

The composted chicken litter-sawdust product looks very much like leaf mold or rich forest soil and it gives excellent results in plant growth studies. The researchers report that tomato plants, for example, showed an increase in dry weight of 400 percent when grown in a soil mixture containing 10 percent chicken manure-sawdust compost.

Agricultural engineers have also composted half-ton batches of cow dung and straw bedding. They've ended up with a relatively odorless material 30 percent smaller in volume and 50 percent lighter in weight. Fur-

ther volume reduction can be obtained by compaction and further weight reduction by drying.

Dehydration: A few very large feedlots have begun dehydrating manure, bagging it, and selling it to home gardeners. However, large amounts of manure have to be handled to justify the investment in machinery and relatively high operating costs.

Dehydration is not too practical for poultry manure because the product reeks when wetted.

Animal feeds: According to some animal nutritionists, processed animal wastes may well be worth more as a feed than as a fertilizer. If this is so, the long-discarded farm practice of running hogs behind cattle may eventually be re-enacted with a modern twist.

Here are some highlights of experimental work being done on recycling livestock and poultry wastes as feeds:

—In Alabama one researcher has gotten good feed efficiency with a beef ration containing 40 percent cattle manure, 48 percent whole shelled corn, and 12 percent ground hay.

The scientist merely scrapes the manure off the feeding floor, blends it with the hay and corn, and ensiles it in a small bunker silo. According to him, fermentation destroys any pathogens and degrades residues of pesticides, antibacterials, and growth promotants that might be present in the manure.

—At the University of Illinois, agricultural engineers centrifuged hog wastes from an oxidation ditch. They report that the wastes contain up to 75 percent crude protein (on a dry weight basis) and have up to 10 times as much lysine as normal corn.

—Scientists at several institutions are feeding dry or ensiled poultry wastes to cattle, sheep, hogs, or back to the birds themselves. One scientist doing this type of research notes that caged layer manure contains anywhere from 30 to 45 percent protein—about half of which is true protein while the remainder is uric acid.

WHAT'S UP IN THE BROILER BUSINESS

The broiler producer: factory worker or farmer?

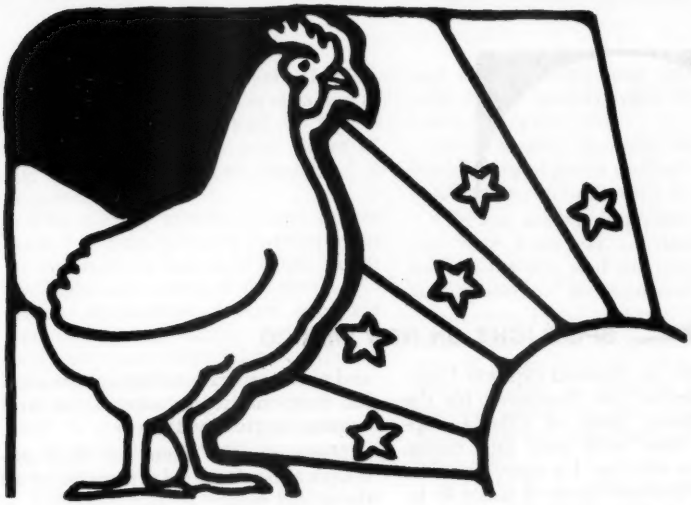
It's become a moot point whether contracts, payment guarantees, and bonuses have made the broiler producer a wage earner rather than an entrepreneur. Improved broiler breeds with better feed conversion rates, lower death losses, and new equipment have certainly turned his farm into an outstandingly efficient production line.

More than 95 percent of the broilers produced in the United States are grown under contract or by large firms handling several stages of production and marketing.

As an example, 30 processing firms taking almost a third of the broilers slaughtered in the major producing States of Alabama, Georgia, and Arkansas accept only birds grown under contract.

Contract arrangements usually call for the producer to provide labor, buildings, and litter, and sometimes water and electricity. The contractor supplies broiler chicks—which remain the company's property, feed, medicine, and transportation.

In many instances, the contracting firm may own one or more hatcheries, feed mills, and processing plants and may be the locally operated subsidiary



of a national feed company or meatpacker.

For raising the broilers, most producers get a minimum payment, plus a bonus for efficient feed conversion rates or other savings for the contractor.

Southern contractors usually pay producers by the pound, while Maine, Maryland, and Delaware producers most often are paid by the bird.

The typical farm flocks of the past have flown. In their place are concentrated clusters, mostly in 10 States producing 84 percent of the Nation's broilers. The States are Georgia, Arkansas, Alabama, North Carolina, Mississippi, Maryland, Texas, Delaware, California, and Maine.

The 1964 Census of Agriculture (no data yet from the 1969 Census) found 35,000 broiler farms, nationally, compared with 42,000 5 years earlier. During that period, output increased from 1.4 billion birds to 1.9 billion. The average output per farm rose from 33,600 broilers to 54,500.

Forty-three percent of all broilers in 1964 were produced on farms raising 100,000 or more birds; 23 percent came from farms with 60,000 to 99,999 broilers; and 23 percent from units producing 30,000 to 59,999. Only 10 percent of the broilers came from flocks smaller than 30,000.

There have been some changes made in the broiler, to go along with increased mechanization, more efficient farm layouts, and larger flocks. Broiler strains have been developed to reduce the time needed to produce a 3½ pound live bird from the 12–14 weeks of 20 years ago to 8–9 weeks now.

Poultry nutritionists have improved feed formulas to cut the feed to produce 1 pound of live broiler from 4 pounds in 1940 to 2.2 pounds today.

Mortality rates of 10 to 20 percent were common 2 decades ago, but even 6 percent is unacceptable now.

All these improvements slashed manhours of labor to produce 1,000 broilers from 250 in 1940 to only 15 in 1969.

An outgrowth of the expansion in efficiency has been a more than 50 percent drop in production costs and farm prices for broilers since the late 1940's. Prices to producers fell from 36 cents a pound in 1948 to 14.3 cents in the spring of 1971. However, with broiler production almost entirely under contract, farm prices based on actual sales of live birds have been gradually losing their importance.

Gross farm income from broilers has moved from $405 million in 1948 to over $1 billion in 1958 and about $1½ billion in 1970.

SPOTLIGHT ON NEW MEXICO

In 1540, the Spanish explorer Coronado searched the Southwest for the fabled Seven Cities of Cibolia, supposedly filled with gold and riches. Coronado also had his more practical side. He brought herds of sheep to be fed to his men.

When Coronado abandoned the quest in 1542, it is told that he gave some sheep to three priests who stayed with the Indians in New Mexico. Nothing is known about the fate of the priests, but it's possible that the sheep's descendants are a significant part of New Mexico's varied agriculture.

"This year's January 1 inventory showed there were 762,000 sheep in the State with a total value of $17 million. Wool sales alone were worth $2.4 million last year," says Joe Herman, Statistician in Charge of New Mexico's Crop and Livestock Reporting Service.

He points out that broad areas of semidesert rangeland in northwestern and southeastern New Mexico are ideal for sheep raising because of the wild vegetation growing there.

However, the Land of Enchantment's agriculture is far from being all sheep and range.

Cattle raising is a statewide enterprise and the largest single source of farm income. Beef cattle and calves accounted for 57 percent of the total farm income for New Mexico in 1969.

All cattle and calves on New Mexico farms and ranches numbered about 1.4 million on January 1, 1971, with a total value of over $233 million. About 96 percent of these were beef cattle and calves while the rest were dairy animals.

Large cattle feeding operations have sprung up all across the State. Cattle on feed have more than doubled in the past 5 years, with marketings reaching 393,000 in 1970.

Only around 3 percent of New Mexico's total land area is classified as cropland, but nearly half of this is high-yielding irrigated land. Most of the 35 million acres of rangeland is semiarid.

The average growing season ranges from 7 months in major farming areas in the south to less than 5 months in the higher elevations of the north.

Any description of New Mexico's agriculture must include a number of products, some produced statewide and others in specialized areas.

Cotton is the most important cash crop in the southern farming belt—worth more than $34 million to farmers last year.

Cotton is grown almost entirely on irrigated land from improved varieties. The high quality of upland cotton—most staple lengths average more than an inch—commands premium prices on the market.

In 1970, there were 126,000 acres of upland cotton harvested for 132,500 bales. In addition, 15,300 acres of American-Pima were harvested. Production of this extra-long staple variety, which sells at about double the price of the upland cotton, totaled 10,700 bales.

New Mexico harvested 307,000 acres of grain sorghum last year with production totaling 17.5 million bushels, almost 90 percent from irrigated land. The crop accounted for around 90 percent of the State's feed grain output with the rest about equally divided between barley and corn.

New Mexico proudly claims the world's largest pecan orchard—around 4,000 acres—in full production.

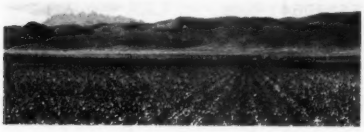
"Pecans are an important crop in our State. Last year, we produced 9.2 million pounds, and the prospects are for expansion," Herman said.

A survey made early in 1969 indicated that about 60 percent of the trees in pecan orchards were under 10 years of age; 22 percent had been planted within the previous 2 years. Additional orchards have been set out since 1969.

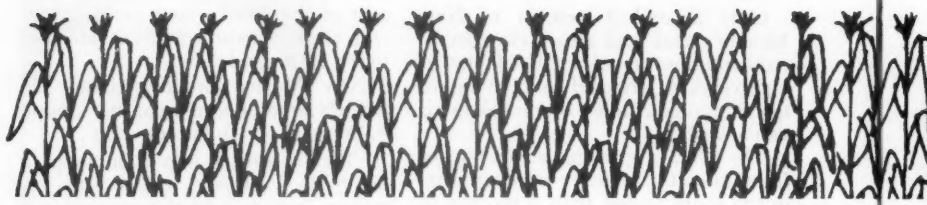
With 12 to 15 years for an orchard to reach full production, it seems this crop could easily double within the next 10 years.

Other crops important to local areas of the State include peanuts, broomcorn, potatoes, and commercial vegetables. Production of peanuts in 1970 totaled 18,286,000 pounds, worth $2.6 million. Broomcorn production from the eastern plains was 2,800 tons and valued at $1,148,000.

Commercial vegetables are grown in the south. New Mexico harvested 58 million pounds of potatoes from 2,500 acres last year. Lettuce, onions, and tomatoes had a combined harvested acreage of over 10,000 acres and a total value of $9.4 million.



Opposite: Some of New Mexico's $17 million worth of sheep staying close to home. *Above:* The State's leading farm money roams the foothills. *Left:* Cotton blankets many farming areas in the Land of Enchantment.



CORN ROW WIDTHS

Which two corn rows in a field are the farthest apart?

Answer: The ones on each end of the field.

Corny—of course! But there has been some serious study on corn row spacing conducted by the Statistical Reporting Service in recent years as a part of its crop estimating program.

SRS says the trend is to narrower rows. The statisticians have been keeping tabs on row widths for several years through the objective yield program conducted during the growing season.

What has caused these mini-rows? Over the past few years, some growers apparently felt they had boosted corn yields to the limit by ordinary means. And so they narrowed the gaps between rows and crowded more plants onto their fields.

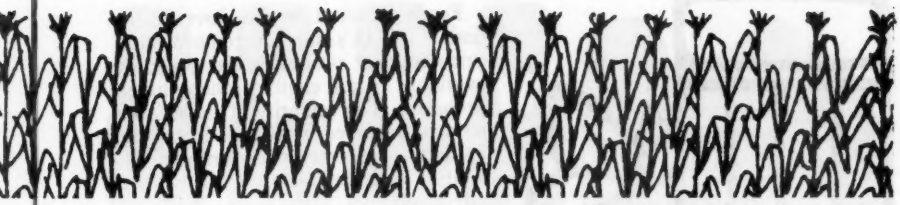
SRS data show the trend has caught on fastest in the leading corn producing States. For sample plots in the important North Central States, the space between rows averaged 37 inches last season. In 1964 the average was 2.9 inches wider.

Row widths are narrowing in other areas, too, but not as much. In the last six growing seasons, corn rows in the South Central States have had a 2-inch shrinkage. The average row space last year was 37.7 inches.

How much of an increase has all this meant in plant population?

According to SRS, the plant population per acre in 14 selected States shows an increase of over 4,000 plants since 1964. The reason for the rise is mainly the narrowing of rows and a trend toward corn drilling rather than hill seeding.

State	Row widths in		
	34.5 & under	34.6–36.5	36.6–38.5
	Percent of sam		
Ohio:			
1964	0	2.7	23.4
1970	26.6	14.8	30.4
Indiana:			
1964	.9	.9	30.9
1970	21.9	8.8	53.7
Illinois:			
1964	.5	0	23.9
1970	16.3	7.4	54.2
Iowa:			
1964	0	0	5.2
1970	13.3	2.5	33.0
Nebraska:			
1964	0	0	8.7
1970	21.6	12.4	19.6
Virginia:			
1964	1.9	15.9	18.7
1970	13.5	25.0	34.5
North Carolina:			
1964	0	3.0	14.1
1970	4.1	12.9	27.2
South Carolina:			
1964	0	4.2	19.5
1970	4.9	7.8	41.2
Georgia:			
1964	4.1	13.0	36.1
1970	4.7	23.6	43.4
Kentucky:			
1964	0	2.8	14.1
1970	11.8	11.8	27.7
Tennessee:			
1964	2.8	2.8	28.4
1970	3.6	9.9	42.4
Alabama:			
1964	1.8	9.8	25.9
1970	0	16.4	38.8
Mississippi:			
1964	2.3	4.7	34.4
1970	11.0	11.0	32.9
Texas:			
1964	.7	7.9	41.0
1970	23.7	2.5	22.9
Total selected States:			
1964	1.0	4.5	22.5
1970	13.9	11.0	35.9



widths in inches			Average row width	Plant population per acre
36.6–38.5	38.6–40.5	40.6 & over		
nt of sample plots			*Inches*	*Number*
23.4	53.2	20.7	39.4	14,113
30.4	19.3	8.9	36.1	18,239
30.9	54.2	13.1	39.2	14,055
53.7	12.5	3.1	36.1	17,921
23.9	64.4	11.2	39.3	14,172
54.2	18.4	3.7	36.8	18,085
5.2	62.3	32.5	40.2	14,288
33.0	39.9	11.3	37.8	18,038
8.7	61.7	29.6	39.9	10,745
19.6	40.2	6.2	36.6	16,427
18.7	26.2	37.3	37.6	10,106
34.5	13.5	13.5	37.5	15,627
14.1	17.6	65.3	41.0	8,886
27.2	27.2	28.6	39.2	14,915
19.5	27.1	49.2	42.2	8,770
41.2	27.5	18.6	39.2	11,867
36.1	32.0	14.8	38.6	7,957
43.4	17.0	11.3	37.9	10,516
14.1	54.9	28.2	39.8	10,745
27.7	36.9	11.8	37.7	14,593
28.4	39.0	27.0	39.8	8,944
42.4	31.5	12.6	38.4	12,167
25.9	22.3	40.2	39.4	7,783
38.8	22.4	22.4	38.8	9,099
34.4	32.0	26.6	39.4	7,550
32.9	30.5	14.6	38.1	8,973
41.0	31.7	18.7	38.8	6,447
22.9	38.2	12.7	35.6	13,154
22.5	42.5	29.5	39.7	12,585
35.9	27.5	11.7	37.1	16,767

CORN YIELDS

Corn yields—what's been happening to them in the Twentieth Century?

Here are some highlights:

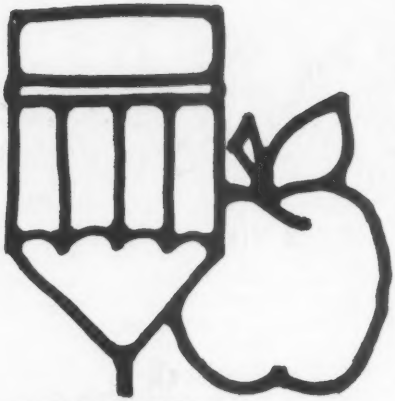
From 1900 to 1935 there was practically no change in yields—partly because of poor weather, partly because the economic depression didn't encourage farmers to adopt new technology. Yields ranged from a high of 31.7 bushels in 1906 to a low of 15.7 bushels an acre in 1934. The average over the period was 26 bushels.

From 1935 to 1950, corn yields rose moderately due chiefly to the development and expanding use of hybrid seed.

However, higher yielding hybrid corn also prompted farmers to invest more in other inputs to boost yields. Other factors in the yield gain were more favorable returns to farmers during and following World War II and the reduction of corn acreage in the lower yielding areas of the country. Yields during 1935–49 ranged from a low of 16.2 bushels per acre in 1936 to a high of 42.5 in 1948 and averaged about 30.9 bushels.

Ever since the 1950's, though, corn yields have climbed rapidly—the result of heavier fertilizer applications, mechanization, more plants per acre, weed and root worm control, and improved hybrid varieties. The average yield in the 1950's was 42.9 bushels; in the 1960's, 70 bushels.

Only last year was there any sort of real break in the steady uptrend. Blight and dry weather cut 12.2 bushels an acre from the 1969 per acre yield record of 83.9 bushels. But things may be returning to normal in 1971 judging from the indicated yield of 83 bushels per acre on August 1.



LUNCH MONEY: NO SMALL CHANGE!

If your school days ended about 25 years ago, you probably remember lunch as something from a brown paper sack. Now, there are often balanced meals planned by dieticians, steam tables for hot items, selected sandwiches and desserts. Reasonable prices, too.

The National School Lunch Program has also been a handsome market for farm products. Last year, about $1.3 billion (wholesale value) in agricultural products were sold for use in program schools.

A little over $1 billion of the food used in the program is purchased locally by schools, primarily at wholesale. USDA donates the rest.

Federal donated foods generally include dairy products, frozen and canned meat and poultry items, and a variety of canned fruits and vegetables especially suited for children's lunches.

Federal assistance for lunch programs began in the early 1930's. In 1946, the National School Lunch Act was passed by Congress, establishing food services as an integral part of the U.S. educational system. To make citizens and civic groups aware of the workings of the National School Lunch Program, the President proclaimed October 10–16 National School Lunch Week to celebrate the program's 25th anniversary this year.

Foods acquired by the Government under USDA's surplus removal and price support programs are generally available to all eligible school lunch programs. The quantity of these foods schools may receive depends on the kinds and amounts in Government inventory and whether they can be used effectively.

According to the Food and Nutrition Service, the Government purchased over $265 million worth of farm products from wholesale markets during the 1969–70 school year for the program.

FNS says that the total Government purchases of all milk products from the wholesale market came to around $99 million.

Butter was worth about $83 million, or roughly 84 percent of the total. Nonfat dry milk and cheese were the next most important dairy products.

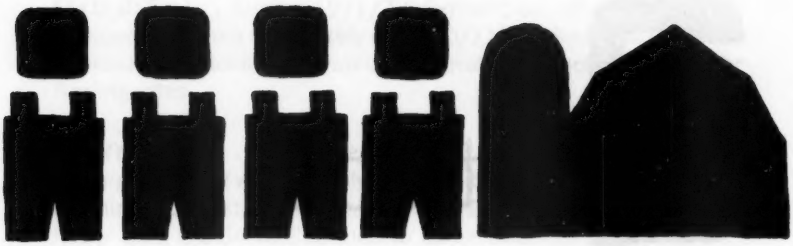
The dollar value of meat, poultry, and fish bought by the Government for schools ran to around $88 million. Red meat was the most important item in the group with about $61 million being spent on hamburger alone.

Next in importance on the Government's list were fruits and juices, and vegetables, with a price tag of $46 million. Canned goods, worth roughly $25 million, accounted for almost 55 percent of the total.

At the present, there is no current breakdown by the commodities of products bought from the local markets by the schools. However, the market for foods in schools continues to grow. From 1960 to 1970, there was an increase of over $600 million in total food purchases by the Government and the schools for the program.

Also more and more schools each year are providing lunch programs. In 1970, more than 75,000 schools with over 23 million students participated in the National School Lunch Program.

There is no doubt that the market for food products for school lunches will continue to grow.



FARM POPULATION TRENDS

In 1970, 9.7 million people—less than 5 percent of our total population—could call a farm home. (This is the first time that fewer than 10 million people have lived on farms since well before the Civil War.)

Even fewer farm residents—2.3 million persons—worked primarily in farming.

The Economic Research Service in cooperation with the Bureau of the Census has just released its profile of the 1970 farm population, along with comparisons with 1960.

One-third fewer farm people: Last year's estimate of 9.7 million farm people indicates a decline of nearly 6 million persons, or 37.9 percent, from the number back in 1960.

The past decade saw an average yearly drop of about 4.8 percent in the number of farm residents, in contrast to a yearly gain of about 1.7 percent in the number of nonfarm people. Result: Farm residents now make up 4.8 percent of the total U.S. population compared with 8.7 percent in 1960.

Minorities' migration: The number of Negroes and other nonwhite minorities on farms declined an average 10.1 percent a year during the 1960's—a much steeper drop than the 4-percent annual rate among whites.

Consequently, nonwhites now make up a tenth of all farm residents. They comprised 16 percent of the total in 1960.

Only half the children: Farm youngsters under the age of 14 numbered 2.5 million last year—only half the total on farms a decade earlier. The sharp decline reflects the continued exodus of young adults of childbearing age from farms—and the resultant lower birth rate.

Children under 14 now make up only about a fourth of the farm population, compared with a third in 1960.

Labor force participation unchanged: Despite the fall-off in numbers, the proportion of farm people in the labor force stayed pretty much the same during the 1960's. At both the beginning and the end of the decade, about three-fifths of the farm population over 14 was either working or looking for a job.

On the basis of sex, though, there were some big changes in participation rates. More farm women went to work—and their rate of participation in the labor force rose from 30 to 38 percent during 1960–70. During the decade the male rate fell from 85 to 80 percent—reflecting, in part, a rising proportion of farm men of retirement age.

Trend to nonfarm employment: Of the 4.3 million farm residents in the 1970 labor force, 54 percent were employed solely or primarily in agriculture, compared with 64 percent in 1960. At the same time, the proportion working in nonagricultural pursuits was 44 percent, up from 33 percent a decade earlier.

outlook

Digested from outlook reports of the Economic Research Service.
Forecasts based on information available through September 1, 1971

RED MEAT . . . For the second half of 1971, red meat output will outstrip year-earlier levels with hikes in beef and pork more than offsetting reductions in veal, lamb, and mutton. While larger production may depress prices some, increasing consumer demand should keep them above last fall's levels.

●

FED CATTLE MARKETINGS this fall may be up from a year ago . . . feeders in the 23 major feeding States had 3% more cattle on feed July 1 in weight groups that typically make up the bulk of fourth-quarter sales. Fed cattle prices should run moderately higher than October–December 1970's average of $27.53 per 100 pounds (Omaha) because of good demand and prospects for orderly marketings.

●

FEEDER CATTLE SUPPLIES, up again this year, are large enough to support moderate increases in placements in coming months. This year's beef calf crop is about 4% larger than 1970's, pointing to further increases in the 1972 feeder cattle supply.

●

HOGS . . . Fall slaughter supplies likely will drop slightly below a year earlier . . . and first half 1972 slaughter could be sharply below year-earlier levels if producers carry out their intended 8% cut in the June–November pig crop. October–December prices will likely average above last fall's $16.40 with prices strengthening further in early 1972.

●

FEED SUPPLY . . . Barring a repeat of last year's corn blight slash of yields, corn output this season could be biggest ever. Coupled with a bumper sorghum crop and more barley than any year since 1958, the feed grain supply in 1971/72 may substantially exceed the previous year's mark. Such a situation could mean lower feed prices for cattle, hog, and poultry producers.

FEED USE . . . During 1971/72 domestic use of all feed grains is expected to gain moderately on 1970/71's 155-million ton level. Improved livestock feed ratios will probably encourage heavier feeding rates.

●

CARRYOVERS . . . Projected use of feed grains during the coming feed year will probably be much below the large crop . . . meaning stocks at the beginning of 1972/73 may be substantially larger than the 34 million tons to be carried into 1971/72.

●

WHEAT FEEDING . . . Lower priced feed grains during 1971/72 could cause some cutback in wheat feeding. Wheat feeding has increased to over 200 million bushels during the past 2 feeding years—reflecting relatively low wheat prices.

●

PER CAPITA FOOD CONSUMPTION will probably increase 1% in 1971, with almost all the gain coming from food from animal sources, primarily meats. The big gainer this year is pork; last year beef and chicken were the outstanding contributors.

●

MEAT CONSUMPTION . . . Americans will probably consume 3½% more meat this year than their 186 pounds per capita in 1970. Pork consumption is expected to be up a whopping 9% from 1970's 66.4 pounds per person.

●

DRUMSTICK DROP . . . Per capita chicken consumption in the first half did not match last year's record high of 20.7 pounds, although we may hit last year's levels during the remainder of the year. For 1971, total chicken consumption may dip a bit—the first fall-off in a decade.

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EGGS . . . Egg consumption for 1971 will top 1970's by only a fraction. Per capita consumption during the first 6 months of the year averaged 1% above a year earlier. However, output has slackened recently and consumption for the rest of the year will probably be about the same as in the closing months of 1970.

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DAIRY PRODUCTS . . . Per capita consumption will likely fall again in 1971 . . . with declines in fluid whole milk and cream accounting for all of the drop as gains in consumption of cheese and low fat milk more than offset decreases for other products. Cheese consumption, a record-high 11½ pounds per person last year, may be topped by a good 3% in 1971.

WOOL PRODUCTION . . . U.S. output of shorn wool this year will probably total about 155 million pounds (grease basis), 4% less than 1970. Some 2% fewer sheep are being shorn and fleece weights are averaging lighter. Outputs is down a little more in the Native wool States than in the 11 Western States, Texas, and South Dakota.

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WOOL PRICES . . . Growers' prices of shorn wool may pick up a little in second half 1971 . . . earlier in the season they were sharply below a year ago. The season-average price this year may total somewhere near 25 cents a pound (grease basis), about a dime below 1970. Sharply reduced domestic consumption of wool, relatively large world supplies, and lower price levels for imported apparel wool have pressured domestic wool prices.

STATISTICAL BAROMETER

Item	1969	1970	1971—latest data available	
Farm output, total (1967=100)	103	102	110	August
Crops (1967=100)	104	100	111	August
Livestock (1967=100)	101	106	106	August
Prices received by farmers (1967=100)	108	110	113	
Prices paid, interest, taxes, wage rates (1967=100)	109	114	120	August
Ratio [1] (1967=100)	99	96	94	August
Consumer price index, all items (1967=100)	110	116	122	July
Food (1967=100)	109	115	120	July
Agricultural exports ($bil.)	6.4	7.2	0.6	July
Agricultural imports ($bil.)	4.5	5.7	0.5	July
Disposable personal income ($bil.)	634.2	687.8	741.1	[3]
Expenditures for food ($bil.)	106.1	114.0	119.2	[3]
Share of income spent for food (percent)	16.7	16.6	16.2	[3]
Farm food market basket: [2]				
Retail cost ($)	1,174	1,225	1,263	July
Farm value ($)	478	480	479	July
Farmer's share of retail cost (percent)	41	39	38	July
Realized gross farm income ($bil.)	55.5	55.6	57.6	[3]
Production expenses ($bil.)	38.7	40.9	42.8	[3]
Realized net farm income ($bil.)	16.8	15.7	14.8	[3]

[1] Ratio of index of prices received by farmers to index of prices paid, interest, taxes, and farm wage rates.
[2] Average quantities per family and single person households bought by wage and clerical workers 1960–61 based on Bureau of Labor Statistics figures.
[3] Annual rate, seasonally adjusted second quarter.

alfalfa !

Alfalfa is one of the world's best sources of protein for poultry, for cattle, and now perhaps for man—thanks to a new extraction process.

To date commercial alfalfa meal processing has been a matter mainly of drying, grinding and compressing from the whole plant into pellets. Over the past 40 years, dehydration has developed into an important industry, but it has its shortcomings. Fed mainly to cattle and poultry, dehydrated alfalfa, as presently made, is not ideal for either the animal or bird.

And the present dehydration process does not meet an end use possibly destined for critical importance: direct utilization of the vast amount of protein in alfalfa for human food.

But, a "wet process," developed by USDA scientists, sorts out the valuable plant substances so they can be specially processed to meet the need of all consumers.

Here's how the wet process works:

Fresh chopped alfalfa is run through rollers that can squeeze out most of the juice. What's left is a moist cake that can be either fed directly to cattle or sent through a conventional dehydrator. The juice can be further processed into a high-protein concentrate powder for poultry—or possibly into a protein supplement for human foods.

USDA scientists emphasize the process doesn't necessarily "rob" from the traditional product, alfalfa meal. It is essentially a scalping operation, removing only enough nutrients to meet the need for a fiber-free concentrate for poultry feed and leaving dehydrated meal that would meet the manufacturer's standard of 17-percent protein.

If the market demanded, the process can be adjusted to produce meals containing various protein levels.

NEW VARIETIES

New varieties of alfalfa are limiting losses from insects and disease.

The newer varieties were generally developed from successful greenhouse mass screening—exposing alfalfa crops to insects and diseases when the plants are most susceptible, at the trifoliate stage. After most of the plants die off, the rest are tested, screened, and bred to obtain the most naturally vigorous disease and insect-resistant seed.

The newest strain, developed by USDA, is Team—a high-yielding protein-rich alfalfa. It took more than a dozen years and evaluation of more than a million plants to develop Team. Seeds became available through commercial sources in 1970.

Originally slated only for planting in Maryland, Virginia, and North Carolina, Team has also been tested for suitability in other areas.

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